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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,159	09/22/2003	Norifumi Furuta	117152	6337

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OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER	
PARRIES, DRU M	
ART UNIT	**PAPER NUMBER**
2836	

MAIL DATE	DELIVERY MODE
12/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/665,159	FURUTA ET AL.	
	Examiner	Art Unit	
	Dru M. Parries	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,13-21 and 25-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,13-21 and 25-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 21, 2007 have been fully considered but they are not persuasive. To clarify, Olarig's method of mechanical and electrical connection of a connector is modified into Clark's invention so that the connection and disconnection of the high-voltage external equipment in Clark's invention can be done as safely as possible. Olarig teaches to allow an electrical connection through a connector only after it has been fully mechanically connected and secured (via attaching means). Clark's invention states that an electrical connection is made only after it is fully mechanically connected, but without the use of the attaching means to secure the connection. That means that in Clark's invention, the connectors could still be pulled apart by hand even though high voltage current is passing through the connector. However, with the modification by Olarig, the electrical connection is only made after the connectors are fully mechanically connected AND secured (by the attaching means) and not able to be pulled apart. So, after the modification, high-voltage electrical current is flowing through the connector only after the connectors are securely fastened together (via the attaching means), and can't be pulled apart, and in turn making the connection and disconnection of external equipment done as safely as possible.

Also, the Examiner agrees with the Applicant that adding a CPU (alone) doesn't further improve either reliability or safety. However, implementing Olarig's method of mechanical and electrical connection of a connector does. The Examiner believes the Applicant misunderstood the Examiner's "inherent" comment. The Examiner was stating that the modification of Olarig's method into Clark's invention inherently means that a CPU is brought into Clark's invention also, since Olarig's CPU is needed to perform the method that is being modified into Clark's

invention. Therefore, after the modification, Clark's invention contains a CPU which changes the electrical state of a connector in response to an attaching means.

The only teaching from Olarig applied to Clark is "*when* the state of the electrical connection between a main device and a piece of external equipment changes," meaning Olarig teaches a method of changing the state of electrical connection in response to the attaching means, not in response to the full mechanical connection. In turn, the way Olarig implements this method is modified into Clark's invention, including a CPU.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 5, 9, 13, 17, 21, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (5,913,691) and Olarig et al. (6,587,909). Clark teaches a high-voltage equipment housing comprising connection means (male and female connectors; the

female connector being attached to the housing) for making an electrical connection to external equipment. He also teaches an attaching means (cam lever and locking means) to prevent the mechanical connection of said connection means from being released by said connection means only, and the cam lever, once secured, prevents the connection means from being touched (Col. 2, lines 26-29). He also teaches the high voltage housing in a vehicle, therefore it would be inherent that there is holding means for mounting the equipment on a vehicle (Fig. 27). It is also inherent that the connection means are positioned to be touchable by a hand of a person, when not prevented by said attaching means, since the cam lever and locking means need to be moved into place to secure the connections. Clark fails to teach an interlock control circuit. Olarig teaches an interlock control circuit comprising a connection means (16), attaching means (18), and a changing means (CPU, 12). The changing means teaches changing the state of connection between a system (10) and external equipment (14) to a disconnected state when the attaching means is detached (Col. 3, lines 46-50; Col. 5, lines 28-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement Olarig's interlock control circuit and method into Clark's invention, so that the connection and disconnection of the external equipment in Clark's invention can be done as safely as possible to minimize the possibility of an electrocution or shock.

5. Claims 2, 6, 14, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (5,913,691) and Olarig et al. (6,587,909) as applied to claims 1 and 13 above, and further in view of Heberlein et al. (6,361,356). Clark and Olarig teach a high voltage housing as described above. Clark fails to teach an interlock circuit attached to said attaching means. Heberlein teaches an electrical connector used in automobiles. He teaches the connector comprising an interlock circuit (56) attached to attaching means (arm lever, 16) and when the

state of the electrical connection changes to disconnected state is when the interlock circuit opens in response to detachment of said attaching means (Col. 4, lines 7-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to add an interlock circuit into Clark's invention so that it can visually notify operators that a connection has been securely made between two devices.

6. Claims 3, 7, 15, 19, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (5,913,691) and Olarig et al. (6,587,909) as applied to claims 1, 13, and 14 above, and further in view of Saitoh et al. (5,274,722). Clark and Olarig teach a high-voltage housing with connectors as described above. Clark also teaches an upper lid on the high voltage distribution box. These references fail to teach a prevention means for the upper lid of the housing. Saitoh teaches a housing structure with an upper lid (9) having prevention means (hooks, 11) connected to the housing for preventing the upper lid from being detached once the connector has been connected (Fig. 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this preventing means for a housing into Clark's invention so that it makes the housing safer for users so that the inner equipment can't be touched unless the connectors are disconnected, which eliminates the possibility of electrocution.

7. Claims 4, 8, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clark et al. (5,913,691), Olarig et al. (6,587,909), and Heberlein et al. (6,361,356) as applied to claims 1, 2, 13, and 14 above, and further in view of Saitoh et al. (5,274,722). Clark, Olarig and Heberlein teach a high-voltage housing with connectors as described above. Clark also teaches an upper lid on the high voltage distribution box. These references fail to teach a prevention means for the upper lid of the housing. Saitoh teaches a housing structure with an upper lid (9) having prevention means (hooks, 11) connected to the housing for preventing the upper lid from

being detached once the connector has been connected (Fig. 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement this preventing means for a housing into Clark's invention so that it makes the housing safer for users so that the inner equipment can't be touched unless the connectors are disconnected, which eliminates the possibility of electrocution.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dru M. Parries whose telephone number is (571) 272-8542. The examiner can normally be reached on Monday -Thursday from 9:00am to 6:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry, can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMP

12-10-2007

12/10/07

MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800